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REMARKS

No amendments have been made. The above claim listing is provided for convenience.

Claims 1, 4-9 and 11 were rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. The Examiner states that the claims contain subject matter that was not described in the specification in a manner as to reasonably convey to one skilled in the art that the inventors were in possession of the claimed invention at the time the application was filed.

The Examiner further stated that the

"disclosure only recites support for the particular value points indicated in the examples for the specific compositions of the examples, but do not provide support for the range values now claimed for the range of compositional make-ups defined by the claims. This is a new matter rejection." (See final Office Action dated May 17, 2006; page 2, last paragraph.)

Applicants respectfully disagree.

The U.S. Patent and Trademark Office Board of Patent Appeals and Interferences, in *Staehein v. Secher*, 24 U.S.P.Q.2d 1513 (B.P.A.I. 1992), presented a thorough review of the "written description" requirement of 35 U.S.C. § 112. The Board observed that the written description requirement is intended to ensure that applicants had possession of a claimed invention as of the filing date and is satisfied if the application reasonably conveys this fact to those skilled in the art. E.g., 24 U.S.P.Q.2d at 1519. See also *In re Smith and Hubin*, 481 F.2d 910, 178 U.S.P.Q. 620, 624 (C.C.P.A. 1973), *In re Smythe and Shamos*, 480 F.2d 1376, 178 U.S.P.Q. 279, 284, as well as *In re Johnson and Farnham*, 194 U.S.P.Q. 187, 195 (C.C.P.A. 1977), and *In re Moore and Janoski*, 439 F.2d 1232, 1235, 169 U.S.P.Q. 236, 239 (C.C.P.A. 1971).

In short, the written description requirement of the first paragraph of 35 U.S.C. § 112 is satisfied by a disclosure that, when viewed in light of the relevant art, reasonably conveys to one skilled in the art that Applicants were in possession of what is being claimed at the time the application was filed.

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The written description requirement does not require Applicants to provide express written support for each and every possible combination of the invention that may be claimed. As set forth above, the written description requirement is intended to ensure that Applicants were in possession of the invention at the time of filing the application. The examples which Applicants relied on for support of the amendment filed on February 14, 2006 are the original examples which were present in the application at the time it was filed in the United States Patent and Trademark Office. It is readily apparent that the Examiner did not believe Applicants original claims were too broad, lacking an adequate written description or not enabled in light of these same working examples, as no such rejections have been made during the prosecution thus far.

The Examiner now wants to require Applicants to only present claims for which they can provide express written support for each of the features claimed in combination with each other. Applicants respectfully submit that this is improper. If Applicants were required to only claim, at any point during the prosecution of a patent application, that subject matter which their specification provides express written support for, the size of the specifications would increase tremendously as each Applicant would include as many variations/embodiments of their invention as possible to ensure they satisfied the written description requirement for all of these variations/embodiments. This is clearly not what is required by the law!

Rather, the written description of the first paragraph of 35 U.S.C. § 112 is satisfied by a specification which reasonably supports the fact that an Applicant was in possession of the invention at the time the patent application was filed. One of ordinary skill in the art would have no doubt that Applicants were in possession of the invention as it now claimed at the time their patent application was filed. The specification in its entirety provides reasonable support that Applicants were in possession of the invention as it is now being claimed. Thus, the present specification completely satisfies the written description requirement of the first paragraph of 35 U.S.C. § 112. Applicants respectfully submit that this rejection is improper and request that it be withdrawn.

Furthermore, Applicants submit that the amendment filed February 14, 2006 does not introduce new matter into the present application. Applicants are claiming ranges for the quantity of mixture formed in (A) and the hollow microspheres which are supported by the original specification. Therefore, these ranges do not introduce new matter into the application.

As set forth above, Applicants are not required to only claim those embodiments of their invention for which they can provide express written support in the specification. They are properly entitled to claim numerous variations, provided the specification reasonably supports these variations. This is not a situation where Applicants have just randomly selected some range to claim. Rather, the range that is now claimed by Applicants is supported by the original working examples. Thus, one of ordinary skill in the art upon reading the present specification would reasonably believe that Applicants were in possession of the invention now being claimed, regardless of whether the specification expressly identifies this range as being suitable for all polyisocyanate compositions.

It is respectfully submitted that Applicants previous amendment (i.e. the amendment filed February 14, 2006) did not introduce new matter into the application. This rejection is improper and Applicants request that it be withdrawn.

The rejection of Claims 1, 4-9 and 11 under 35 U.S.C. § 103(a) as being unpatentable over the EP 0,005,903 patent in view of the Plummer et al reference (U.S. Patent 6,284,809) was maintained.

The EP 0,005,903 reference relates to a process for the manufacture of polyurea foams. This process comprises reacting an organic polyisocyanate with at least a chemically equivalent amount of water in the presence of a catalyst for the reaction and a triaryl phosphate and/or an aromatic halogen compound. Suitable catalysts are described at column 2, line 19 through column 3, line 23. Suitable additives include surface active agents, foam stabilizers, minor amounts of polyol, amino or phenolic resins, dyes, pigments, fillers, inorganic flame retardants, etc. (see column 4, line 4 through column 6, line 12).

Thermally insulating syntactic foam compositions are disclosed by U.S. Patent 6,284,809, the Plummer et al reference. These syntactic foam compositions are formed from a resin binder which contains a mixture of hollow microspheres and Mo-6806

hollow minispheres. The resultant syntactic foams have a thermal conductivity of less than 0.120 watts/meter °K. These syntactic foam compositions comprise about 40 and 45 volume % of hardened resin binder containing hollow microspheres, in which the microspheres comprise from about 55 to 60 volume % and about 65 to 50 volume % minispheres. See column 2, lines 60-65. It further discloses that the volume ratio of foam containing microspheres to minispheres is between about 35 and 50 volume %, and preferably about 40 to 45 volume % syntactic foam containing microspheres, and in which the microspheres comprise 45 to 50 volume%. See column 3, lines 45-51. Thus, the microspheres account for 45 to 50 volume % of the 35 to 50 volume % (and preferably 40 to 45 volume %) which is the hardened resin binder containing the microspheres. In other words, the hollow microspheres account for between 15.75 volume % and 25 volume % of the total syntactic foam composition in the Plummer et al reference.

Applicants respectfully submit that this combination of references leads one of ordinary skill in the art to combine the polyurea foams of the EP 005903 reference with both the microspheres and minispheres of the Plummer et al reference (U.S. Patent 6,284,809). The polyurea foams of the EP '903 reference comprise the reaction product of an organic polyisocyanate with an at least chemically equivalent amount of water, in the presence of a catalyst, and a triaryl phosphate and/or an aromatic halogen compound. See page 3, lines 3-7. The syntactic foams of the Plummer et al reference comprise a resin binder, microspheres, and hollow minispheres. See column 2, lines 28-34 and lines 60-65 and column 3, lines 45-57; column 4, lines 6-9. Accordingly, this combination of references leads one of ordinary skill in the art to combine the polyurea foams of the EP '903 patent with the both microspheres and minispheres of the Plummer et al reference. These resultant products would comprise the reaction product of an organic polyisocyanate with an at least chemically equivalent amount of water, in the presence of a catalyst, and a triaryl phosphate and/or an aromatic halogen compound (from the EP '903 patent), and both microspheres and minispheres from the Plummer et al reference. It is respectfully submitted by Applicants that this is not the presently claimed invention. Accordingly, these references do not properly render the presently claimed invention obvious under 35 U.S.C. §103(a).

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It is respectfully submitted that the reaction mixture of the present invention consists of a polyisocyanate and water, with water being present in an excess of from 2 to 5 times the stoichiometric quantity required. The consisting of language in the present claims clearly excludes the triaryl phosphate and/or aromatic halogen compound required by the EP '903 patent from the present invention. The triaryl phosphate and/or aromatic halogen compound provide a fire-retardant and/or plasticizing effect to the resultant foams. Thus, at least one of these components is essential to the polyurea foams of the EP '903 patent.

It is respectfully submitted that it is improper to exclude these components from the polyurea foams disclosed by the EP '903 patent as this would result in the foams no longer being suitable for their intended purpose in accordance with this reference. Both the CCPA and the Federal Circuit have consistently held that when a rejection under 35 U.S.C. §103(a) is based upon a modification of a reference that destroys the intent, purpose or function of the invention disclosed in the reference, such a proposed modification is not proper and a prima facie case of obviousness has not been established. (See *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984).)

Furthermore, this combination of references leads the skilled artisan to conclude that both microspheres and minispheres are essential. More specifically, the Plummer et al reference at column 1, line 49 through column 2, line 3 discloses that buoyancy and insulative capacity are functions of composition, density and volume filling of the hollow spheres, and that the volume filling of hollow spheres in a syntactic composite article is a function of the density of the hollow spheres and packing factor(s) of the hollow spheres. In turn, the packing factor is dependent on the size and size distribution, and is measured as the ratio of bulk density to true particle density, with maximum packing and minimum density attained when spheres are touching. The packing factor is improved by using a combination of two distinct hollow sphere types which differ in size by at least a factor of seven.

It is apparent from this, that the syntactic foam compositions of the Plummer et al reference require both the hollow microspheres and the hollow minispheres. As set forth above, the relative volume %'s of each of these types of spheres and of the foam composition are also disclosed. Upon reading these two references, the skilled

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artisan would combine the polyurea (including the triaryl phosphate and/or aromatic halogen compound) from the EP '903 patent, with the microspheres and the minispheres from the Plummer et al reference. As previously discussed, it is clearly improper to exclude the minispheres from the combination in view of the disclosures of the Plummer et al reference. It is readily apparent from the disclosure of this reference that adequate packing and thus the desired density, buoyancy and insulative capacity can not be achieved without the combination of the minispheres and the microspheres. Therefore, Applicants submit that any modification of the Plummer et al reference that excludes microspheres or minispheres is improper as it destroys the intended function of the invention of this reference.

(See *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984).)

It is respectfully submitted that the modifications to the EP 0005903 reference and the Plummer et al reference which are necessary to "arrive at" the presently claimed invention clearly destroy the function or intent of one or both references. Accordingly, these modifications are improper and a *prima facie* case of obviousness has not been established by the Examiner. Applicants therefore submit that this rejection is improper and requested that it be withdrawn.

This combination of references does not fairly suggest the presently claimed invention to one of ordinary skill in the art. Only after reading the present specification does it become obvious what modifications should be made. Such a perspective does not, however, provide a proper basis for a rejection under 35 U.S.C. § 103(a).

In view of the above amendments and remarks, Applicants respectfully submit that the presently claimed invention is not properly rejected under 35 U.S.C. § 103(a) as being obvious over EP 0,005,903 in view of U.S. Patent 6,284,809. It is requested that this rejection be withdrawn and Claims 1, 4-9 and 11 be allowed.

Respectfully submitted,

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